The Year 2000 Software Project

An Honors Thesis (HONRS 499)

by

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Abstract

This study on the Year 2000 Software Project involves three different organizations efforts to address the Year 2000 Problem. The Year 2000 Problem is one that stems from computer programs using only two digits to represent the year. The discussion will include a history and explanation of the problem as well as a comparison between this project and a typical software project. Finally, there are three case studies for the three organizations as well as a comparison of their efforts.

Acknowledgements

Thank you to Dr. Clinton Fuelling, my thesis advisor. His help and guidance were valuable in the refining of the scope of my project. Thanks to Dave Raspolich (Anzelc Welding), Chad Rufenbarger (Brightpoint Inc.), and Dr. Dennis Kramer (Ball State University) for taking the time to fill out my surveys and to meet with me to discuss their company's Y2K efforts. I know that their time was precious and I greatly appreciate them taking time to help me.

Contents

The Year 2000 Problem

The Year 2000 Problem, the Millennium Bug, Y2K are all aliases of the same problem. One that stems from computer programs being written to represent dates with only two digits to store the years. The computers are forced to assume a twentieth century date and assume that the first two digits in a year field are a nineteen. The problem is that a date in the year 2000 will be stored as 00. The computer will then interpret this as the year 1900. Systems not corrected by the time dates in the year 2000 are used will be affected in a number of ways ranging from minor inconveniences to complete system failures.

This problem is a global problem that will affect us all. Analysts revise their estimates everyday regarding how much the world will be affected after January 1, 2000, and every analyst has a different view. It's a known fact that there will be problems, but the biggest problems will most likely occur in other countries where awareness of the problem is well below what it should be.

People, especially those footing the bill to correct these problems, often want to know how the problem happened. Why didn't this problem get noticed earlier and corrected earlier? The fact is it was done intentionally. Storing dates as only 2 digit years is economical. Storing and representing dates in this format can save huge amounts of storage space. In the early days of computing both physical storage and memory were costly and usually very limited. The machines had less storage and processing power than the laptop computer on which this is being written. Today our home PC's have 64 megabytes (millions of characters) of memory and 6 gigabytes (billions of characters) of disk storage all for a cost of around $1000. Thirty years ago, businesses had to spend a

million dollars to buy a computer with 32 kilobytes (thousands of characters) of memory and 2 megabytes of disk storage (Yourdon & Yourdon 1998). It was known even back then that programs written with only two digit years would fail in the year 2000. However, programmers never expected their systems to last five years let alone the 30 plus years some of these systems have been in use. Since then procrastination and the hopes of replacing the system as well as misunderstanding of the problem have kept this problem a problem. Had all companies started addressing this problem in the early 1980's, this would not be anywhere near the issue it is now.

All computers are potentially affected. Both the software that they run and the actual physical hardware. There are actually three different layers in which a computer can be affected. A computer's hardware is the first layer affected. Specifically the motherboard is susceptible to Y2K problems. Although the motherboard is really just a complicated circuit, it is the BIOS on the motherboard that can be affected. The BIOS is actually a small computer program that is used when a computer first starts up. Virtually all motherboards built up until the late nineties are not Y2K compliant. New motherboards are all being built compliant. BIOS manufacturers have issued fixes for the BIOS.

The second layer of a computers operation is the operating system. The operating system coordinates the efforts of all of the pieces of the computer. Typical operating systems are the Windows family, Macintosh OS and Unix. All major operating systems have released patches or upgrades that can be installed to make the PC compliant.

The applications that actually run on a computer make up the third layer. It is this third layer that is large and diverse and it is also this third layer that makes up the bulk of the Year 2000 problem.

The Year 2000 Project

The year 2000 software project is an interesting study. It is a project with many similarities to traditional software projects, but it also has many differences. The most obvious difference is the deadline. Although from time to time there are projects that have hard-lined deadlines for critical systems that must be implemented by a certain date. The majority of software projects do not have such a stringent deadline, and unfortunately many projects routinely extend beyond their deadline. Not a pleasant precedent for the IT manager. It is also a project that cannot be disregarded. A company or organization has two options, either fix their systems or do nothing and experience a partial to complete failure of their systems.

The Year 2000 Project can be addressed like any other Information Technologies project. In fact, many of the same principles used for software projects can at least be adapted for use in this project. According to Meilir Page-Jones (1988) the "Seven Ages" (steps) to a classic computer project are: problem recognition, feasibility study, analysis, design, implementation, testing, and maintenance. These same steps can be used when addressing Y2K. Although hardware is inevitably involved in the Y2K project it must be noted that non-compliance of hardware is a result of software embedded in it. Often this software can be patched or upgraded, and while it must be addressed in a complete Y2K study, it can only be replaced or fixed with a patch from the manufacturer.

Problem recognition, the first step, involves identification by someone that there is a need to at least investigate an IT project. In the case of Y2K it is usually an IT manager, or a CIO (chief information officer) who initiates the project. It could also be an astute

executive who is aware of the approaching problem and is prepared to take the first steps. At this time a company should also educate itself regarding Y2K. Everyone who understands the problem potentially becomes an investigator.

The feasibility study involves two steps. The first step being validation of the project or determining if the project is worth the expense. In the case of the Year 2000 problem this is an overwhelming "Yes". Unfortunately companies do not have a choice as to whether or not they want to address Y2K. The second step in the feasibility study is to determine whether to make or buy the solution to the project. In the case of Y2K this can be modified to be a question of repair or replace existing hardware and software. At this time in they Y2K project this question may not be able to be answered and may need to be revisited after more information is gathered.

Analysis will require the first major investment of time and resources. Analysis in the Y2K project general requires a triage. "A triage is a medical process where large numbers of wounded or injured are sorted and classified based on urgency." (MacMaster 1999) Once the triage is complete and all pieces of hardware and every software program have been inventoried and its importance assessed, decisions can begin to be made. Decisions as to which systems will need to be addressed and which (if any) systems can be ignored and phased out of use. At this time it may be prudent to reconsider the second step in the feasibility study as to repair or replace.

The design phase involves either planning for a new implementation if the choice was made to replace the existing software or developing a plan for repairing the existing software. This could be as simple as going around to every PC and server and running a patch provided from the manufacturer or it could be as complex as having to go through

every line of computer code looking for date fields, correcting them and recompiling the programs.

In a typical well run project, the implementation phase should be one of the easiest because a well though out design will greatly facilitate implementation. Unfortunately with Y2K, implementation is nothing more than a labor-intensive painstaking process of identifying problems in the programs and repairing them.

Testing is extremely important in the Y2K project. Although testing is important in a normal software project, often bugs that slip through can be overlooked and the project can still be considered a success. Any bugs that slip through the Y2K project could be devastating and leave the project a complete failure.

Finally the implementation phase of any project including Y2K involves making the changes that have been made take affect in the actually production environment.

There still remain questions from a business standpoint such as who will take ownership for the project and what parts of the company will be involved. Unlike many projects that have a clear-cut owner, for example, accounting managers would take ownership of a new accounting package, Y2K does not have an owner. IT feels the entire company should be involved while other departments in a company feel that it is a computer problem and IT should take responsibility. The fact remains, Y2K affects every area of a company, even those who don't interact with computers. Ideally the entire company will be involved in all aspects of the project, especially the identification of problem areas and in testing. Each department can at least go through any programs they may interact with and any reports they receive and verify that four digits are being shown for the date.

Finally the cost of dealing with this issue brings up many questions. Although most likely all of the Y2K work could be done by an organization's employees if they were taken off all other projects, that's not very feasible. Companies must decide whether or not to use external consultants. Although consultants are often costly, they are paid to be experts and deliver efficiently. Since Y2K projects are usually time-intensive and repetitive, using consultants also allows employee to continue their work and to continue working satisfied.

Year 2000 Case Studies

The year 2000 problem varies from company to company because every company uses different hardware and software and has different numbers of employees devoted to information systems. The purpose of this research is to compare and contrast different Year 2000 Projects. In order to accomplish this, three very different organizations were studied. The projects of a mid-sized publicly traded company, a small domestic company, and a university were all studied. To accomplish this study, key personnel in the organizations were given a standard survey of questions and they were then interviewed to gather more information. Also, when available, project timelines, letters, and other important documents were analyzed. The individual efforts will first be described and then compared and contrasted. The responses to the written survey questions as well as some sample documents can be found in the Appendix.

Anzelc Welding: A small company

Anzelc Welding is a small privately owned company in Rockdale, Illinois. Anzelc provides welding and metal fabrication services for a variety of companies and organizations Since it's founding in 1958 they have provided services to customers throughout the Chicagoland area. Their largest customer is Caterpillar Inc., a maker of heavy-duty industrial machinery. For Caterpillar, they provide custom-made metal parts. It is also because of Caterpillar that Anzelc began to address Y2K.

Anzelc's information systems are simple by today's standards. Their reliance on these systems is minimal. Their LAN is comprised of a single OS/2 server and five client PC's, running a dual boot of OS/2 and Windows 3.1. They use their system for only two applications: American Express Billing software and STCAT (a proprietary software developed by Caterpillar used to send and receive orders for parts electronically).

Dave Raspolich, the office manager, began the company's Y2K analysis in January of 1999 because he had received software upgrades from both Caterpillar and American Express. These upgrades were primarily Y2K fixes that they were required to install. Not having anyone knowledgeable or devoted to IT, the company was forced to turn to an independent consultant for advice. It was found that the software upgrades would provide the necessary fixes, unfortunately their hardware was not in very good condition. The hardware was outdated and it was unsure if any of the machines could support updated operating systems.

Around the same time the company was beginning to consider investing more in their information systems. It was determined that investing in a new local area network

would allow them to look into new software packages that would better help them do their business as well as tackle their Y2K problems.

They are currently in the process of determining hardware requirements. The only open issue as of May 1999 is to determine whether the STCAT software will run in a windows environment. They hope to have their new system installed and be up and running on the upgraded software by the end of the summer 1999.

As for a contingency plan, the company is not concerned because they currently have an almost totally manual process. The little they use technology would not hurt them if they were unable to use it for up to even 3 months.

Brightpoint Inc.: A mid-sized company

According to the company's website(http://www.brightpoint.com) : Brightpoint is headquartered in Indianapolis, Indiana, U.S.A. and provides services to global wireless equipment manufacturers including Nokia, Ericsson, Motorola, Kyocera and Panasonic and to wireless network operators in more than 75 countries around the world.

Brightpoint is a leading provider of innovative services to network operators and equipment manufacturers in the global wireless telecommunications industry. Brightpoint strives to enhance the success of its customers through the specialized and focused provision of efficient and effective solutions for their mission critical business requirements. The Company's innovative services include inventory management, prepaid solutions, custom packaging and other outsourced distribution and logistics services.

Brightpoint is a publicly traded company and is listed on the NASDAQ under the symbol (CELL). The company was founded in 1986 in Indianapolis. Since then the company has become a worldwide leading distributor of wireless technology. In the United States alone they have sites in Indianapolis, Bensalem PA, Sparks NV, and Miami FL and over 750 employees. For the fiscal year ending 12/31/1998 net sales had risen to $1.63 billion.

Brightpoint is a company that has invested heavily in their information systems. They have over 60 personnel devoted to IT . Although Brightpoint is an international company, for the purpose of this study, only their domestic Year 2000 project efforts will be examined. The problems of a global effort are great enough to provide a separate study.

Brightpoint's information systems include a mixture of servers, PC's and network hardware as well as phone, voice mail, and security systems. Their primary network is a Novell network with Microsoft Exchange for their e-mail. Their business package is a custom modified software package (Endura) built using Informix-4GL and using an Informix database on a Sun Unix server. The applications are accessed using PC's and dumb terminals.

The company's Y2K manager is Chad Rufenbarger. Chad has been a project manager for the company for 2 years. He reports to the CIO of the company. The company began addressing Y2K in June of 1998. Being a publicly traded company they are forced by the SEC to disclose information regarding their Y2K efforts. The Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") requires companies to disclose information of known events, trends and forward looking statements. Year 2000 efforts fall under the category of forward looking statements. Brightpoint released it's initial public statement as a part of their Quarterly Report (SEC form 10-Q) issued November 16, 1998. This form which can be found at the company's web site states that the company had begun addressing the situation by creating a Project to do so. The project is divided into four phases: Planning and Awareness, Inventory, Assessment, and Remediation. The planning began in June, 1998 and was completed by October, 1998. Inventory was completed by the end of 1998. Assessment was completed in April, 1999 and Remediation is scheduled to be complete by mid 1999.

Planning and Awareness involved creating a project charter, assembling the team and creating a timeline. It also involved making the company at large aware of the

problem. Inventory involved a complete inventory of every PC, server, printer, software package, and piece of network hardware owned by the company. All of this information was gathered and tracked in a spreadsheet. Assessment involved obtaining any and all information from vendors and hardware manufacturers regarding compliance of hardware and software. Early in the project it was known that there were compliance issues with Informix-4GL and at best they would be required to recompile every program (over 1000). On top of that every program must be analyzed for use of only two digits in storage of dates. Analysis and modifications of Endura became a project itself with it's own project charter. While the Endura project is a separate project, its timeline coincides with the overall Y2K timeline, and Chad is still ultimately responsible.

The analysis proved that almost all software and hardware could be updated with upgrades from the manufacturers. All of this is to be done throughout the remediation phase. Also at this time in the Endura project is when the recompilation and modification of all of the programs will occur.

Most of the Y2K planning and assessment has been done by Brightpoint employees. However, because of the time and effort involved in the analysis and remediation of Endura, it was decided that contractors would be used. There have been around 50 people working on Y2K on at least a part time basis.

Brightpoint's Y2K efforts while time consuming have up until now not affected day to day operations. They are scheduled for a "code-freeze" in June while they recompile and test the Endura system. During this time no modification to Endura programs will be allowed.

Although the company is confident in their Y2K team and efforts, they have created a contingency plan that details who will do what in case of a partial or total information systems failure.

Ball State University: A mid-sized mid-western university

Ball State University has been in existence in Muncie, Indiana since 1918. In it's early days Ball State was known primarily as a college for teachers. Today Ball State is a university comprised of seven different academic colleges and an enrollment of just under 19,000 students.

Ball State has been known for it's advanced use of technology. Currently Ball State owns over 6300 PC's and over 500 printers across the campus. The University's information systems are vast. Ball State's Y2K efforts began in 1996 because incoming freshmen in 1996 were scheduled to graduate in the year 2000. This would have been the first time some of their systems saw this date.

Dennis Kramer as Director of University Computing Services (UCS) is ultimately responsible for Ball State's Y2K efforts, however he is only responsible for information systems. As of May 1999, no one was being held responsible for compliance of the electric plant, elevators, or anything else along those lines. Dennis has taken some of the initiative to be sure that the appropriate people are at least aware of the situation. Dennis himself reports to the Executive Assistant to the President.

Ball State's hardware and software systems are vast and varied. The are so vast that Dennis and UCS do not have a complete inventory of hardware or software. They do not know what applications the different colleges are running on their PC's.

The Y2K project at Ball State began with the identification of the "mission critical" systems. These are the systems that the University needs for operations on a day to day basis. E-mail, registration, grades, accounting, and the administration's programs are among the 12 systems to be identified as "need to fix." These systems all have a system

manager who is held responsible for the compliance of the system. The system manager knows the software and is responsible for upgrading or updating the system to make it year 2000 compliant. If he needs additional help or support UCS will provide it. UCS assures that these critical systems will be compliant by July 1, 1999.

As for the remaining systems, applications, and PC's throughout the University, the compliance of these systems will fall under the responsibility of the College or department in which they belong. Most of the colleges and departments have at least one person dedicated to IT. It is up to that person to ensure compliance of any systems in his department. UCS will still take part in this effort as an advisory and support role. They have established a very thorough website (http://www.bsu.edu/ucs). This site contains up-to-date information regarding the progress of UCS as well as information for addressing and correcting Y2K issues.

When classes resume in the fall UCS will begin to dispense information regarding Y2K in all forms it has access. They will utilize the school newspaper as well as campus updates to encourage departments as well as individual students to check on their own systems compliance. Again they will provide the necessary information to address these issues as well as be available to help out in any way.

Dennis and UCS make no claims that the University will be fully compliant by Jan 1, 2000, in fact they know that there will be problems. However, they are fairly confident that these problems will be merely cosmetic and they will address them as the arise. Fortunately, they have a couple of weeks after the first of the year before classes resume for the spring semester and before the University is back to full operations. Therefor, their contingency plan is that they are anticipating minor problems. As the problems arise they

will address them. They plan to rearrange resources so that at the end of the year and after the turn of the century they will have resources ready to handle Y2K issues.

Case Studies Summary

While the three studies provide a very small slice of the Y2K pie, they do emphasize the point that there are similarities and differences in Year 2000 Projects and that although it's the same problem, no Y2K project is the same. Every company and organization in the world that uses any type of information systems must at least investigate whether or not the have an Y2K issues or else suffer the consequences that will arise from ignorance. A majority of these investigations will result in the identification of problems that must be addressed. Some organization may be in a position to replace their affected systems, other's may simply need to install upgrades from the manufacturers, while others will need to go through the tedious task of repairing all of their software.

The three organizations looked at in this study followed the seven steps in the project life cycle that were described earlier. However, many of these steps did not necessarily apply and little time was actually spent on them. If we were to generalize their efforts, a basic project path which is awareness of the problem, inventory and assessment, and remediation was followed. However, this general overview is the extent of the similarities of the three organizations. Anzelc, because of their limited use of information systems had it the easiest. Any problems that may arise after the first of the year if they don't do anything is minimal and will not hinder the company to any noticeable extent. Ball State's information systems are vast. Their hardware and software inventory is the greatest of the three organizations studied. However they have been addressing the situation for the longest amount of time and seemed rather relaxed about the situation. The Y2K team does not intend on addressing every issue. While their critical systems have been addressed in a typical investigation/repair manner their attitude of waiting for

problems regarding other systems was interesting. Brightpoint clearly has the strictest project, possibly because the Y2K team has so many people to answer to: management, customers, and shareholders.

Organizations also have choices regarding who is going to do their Y2K work. Dennis Kramer of Ball State stated that one of the biggest problems they've encountered is that the work is tedious and boring. It's hard to tell someone that they are committed full time to working on Y2K issues. Especially considering that many who enter this field of work due so because it is always changing and advancing. However, there is nothing technological and new about addressing Y2K problems with existing and sometimes antiquated systems.

The important thing that was learned here is that nothing regarding Y2K is new. The problem is not new and the solution is not new. Adaptation of common information systems projects seems to be the ideal way of addressing the Year 2000 Problem. Although there is not a perfect methodology for all company's to use, for every company must address the problem in their own manner. Unfortunately time for companies to begin addressing this problem is running out as are their options. As the year 2000 approaches, companies will not have the flexibility of the companies looked at in this study, but they will still follow the same project life cycle. This life cycle is a proven one that has sustained the industry for years and apparently will continue to do so in years to come.

Appendix A1 – Anzelc Welding Survey Response

Anzelc Welding Response

Interviewee Information

- Name
  Dave Raspelich
- Today's date
  03/14/1999
- Your position
  Office Manager
- How many years have you been with this company/organization
  24

Company Profile

- Company/Organization Name
  Anzelc Welding
- Date Founded
  1958
- Number of Employees
  35
- Number of Sites
  1
- Annual Revenue
  not willing to disclose
- Business Function/Purpose
  To provide custom welding and metal fabrication services.
- Number of employees dedicated to IT
  zero

Inventory

- Please give a general inventory of all computer related hardware
  1 OS/2 server, 5 client machines running dual boot OS/2, Windows 3.1

- Please give a general inventory of all software used
  American Express Billing Software
  STCAT

Project Efforts

- When did you first start addressing year 2000 issues?
  Jan 1999
- How many individuals have been dedicated to the effort up to now
  zero, we are utilizing an outside contractor
- How many hours have been put forth towards the project

5 hours

- When is anticipated compliance date
  no anticipated date as of yet
- What is the estimated total cost
  $15,000
- What compliance messages will you issue
  none
- What efforts are being done to insure compliance of primary vendors and customers
  none
- What external mandates were put on you about compliance.
  Our primary customer requires us to upgrade our client version of their software
- Who is responsible individually for the project
  myself
- Which department is taking ownership
  we have breakdown of departments

Problem

- What is the extent of the problem
  We know that our system is not compliant and our current hardware and operating systems are not upgradable
- Which systems have been affected
  Our only system has been affected
- Which systems have already been fixed
  none
- Do you have a replace or repair strategy
  We need to purchase new hardware anyway, so we are replacing our hardware. Our 2 software packages require updates from the vendors.
- What is your confidence level that all systems will by year 2000 compliant by Jan 1, 2000?
  We are confident that we will be compliant.
- What will be the impact of any faults that may occur?
  The impact will be minor because we rely very little on our information systems.

Appendix A2 – Brightpoint Survey Response

Brightpoint Response

Interviewee Information

- Name – Chad Rufenbarger
- Today's date – April 16, 1999
- Your position – Y2K Project Manager
- How many years have you been with this company/organization - 2

Company Profile

- Company/Organization Name – Brightpoint, Inc.
- Date Founded - 1986
- Number of Employees – 1,500 (750 in North America)
- Number of Sites – 43
- Annual Revenue - For the fiscal year ended 12/31/98, net sales rose 57% to $1.63 billion
- Business Function/Purpose - Brightpoint, Inc. is a provider of services, including distribution and integrated logistics services, to customers within the supply chain of the global wireless telecommunications industry.
- Number of employees dedicated to IT – around 60

Inventory

- Please give a general inventory of all computer related hardware

  Please See repository

- Please give a general inventory of all software used

  Please See repository

Project Efforts

- When did you first start addressing year 2000 issues? June 1998.
- How many individuals have been dedicated to the effort up to now? Limited number of dedicated employees, around 50 are on the team (not full time).
- How many hours have been put forth towards the project? around 3000.

- When is anticipated compliance date – mid 1999 (July 1st)
- What is the estimated total cost – not disclosing
- What compliance messages will you issue - See "Happy Letter" and our new 10K (both reprinted in Appendix)
- What efforts are being done to insure compliance of primary vendors and customers – primary vendors and customers have been contacted to determine/assess their compliance status (see letters/questionnaires).
- What external mandates were put on you about compliance. – contact Greg Wiles or look up SEC requirements related to Y2K (www.sec.gov/news/home2000.htm).
- Who is responsible individually for the project – Dave Currence, CIO and myself, Y2K Manager
- Which department is taking ownership – Corporate IT

Problem

- What is the extent of the problem? Extent of the problem is still not known. Investigation is nearly complete and analysis following will let us know of the extent.
- Which systems have been affected – see repository to quantify
- Which systems have already been fixed – see repository
- Do you have a replace or repair strategy – if an item cannot be upgraded it is either: retired, repaired or replaced based on business needs and financial impact.
- What is your confidence level that all systems will by year 2000 compliant by Jan 1, 2000? - The Company believes that the Project will meet its Year 2000 objectives in a timely manner. However, the Company has not yet completed all necessary phases of its Year 2000 initiative. The ability of suppliers and customers with which the Company interacts to timely convert their systems to be Year 2000 compliant is somewhat uncertain and not directly under the control of the Company. Lastly, disruptions in the economy generally resulting from Year 2000 issues could also have an adverse affect on the Company's operations. Such failures could materially and adversely affect the Company's results of operations, liquidity and financial position.
- What will be the impact of any faults that may occur? - The Company is dependent on wireless equipment manufacturers for supply of wireless handsets and accessories. Additionally, demand for the Company's products (wireless handsets and accessories) by the Company's customers is dependent on the ability of network operators to provide wireless network services to the end-users of those products. Failure in the products and/or systems of the wireless equipment manufacturers or network operators, including those resulting from a lack of Year 2000 compliance, could have a material adverse effect on the Company.

Appendix A3 – Ball State Survey Response

Ball State Response

Interviewee Information

- Name
  Dennis L. Kramer
- Today's date
  04/23/1999
- Your position
  Director, University Computing Services
- How many years have you been with this company/organization
  22 years

Company Profile

- Company/Organization Name
  Ball State University
- Date Founded
  1918
- Number of Employees
  faculty/19000 students
- Number of Sites, and sizes
  3 locations, main campus in Muncie, Indiana
- Annual Revenue
  N/A
- Business Function/Purpose
  University
- Number of employees dedicated to IT
  close to 90

Inventory

- Please give a general inventory of all computer related hardware
  Over 6300 PC's, 500+ Printers, VAX cluster comprised of 5 machines, NT servers, IBM mainframe, Sun server, 50+ LAN's

- Please give a general inventory of all software used
  There is no complete software inventory, especially for PC based software.
  Mainframes contain the administrative software packages, the compilers and databases

Project Efforts

- When did you first start addressing year 2000 issues?
  1996

- How many individuals have been dedicated to the effort up to now
  1 full time coordinator, 1 full time micro, and a few student employees

- How many hours have been put forth towards the project
  Although it is not being tracked, approximately 15,000 hours
- When is anticipated compliance date
  Although there is no anticipated 100% compliance date, the 12 mission critical systems will be compliant by July 1st (a new financial system may be purchased, if that happens, then that system will not be fully tested until October 1st.)
- What is the estimated total cost
  ¼ to ½ million dollars (virtually all in lost opportunity, a small amount being physical dollars spent)
- What compliance messages will you issue
  No compliance messages will be issued, but the President and Board of Trustees will be assured that no crises are expected.
- What efforts are being done to insure compliance of primary vendors and customers
  None
- What external mandates were put on you about compliance.
  None
- Who is responsible individually for the project
  myself and I report to the Executive Assistant to the President
- Which department is taking ownership
  UCS

Problem

- What is the extent of the problem
  The problem invades virtually all systems at Ball State. It has been a problem that has been labor intensive to address and will continue to be.
- Which systems have been affected
  Still not known completely but many systems looked at have already been affected
- Which systems have already been fixed
  Many standalone applications and server applications
- Do you have a replace or repair strategy
  repair
- What is your confidence level that all systems will by year 2000 compliant by Jan 1, 2000?
  Ball State will not be 100% compliant by Jan 1. The mission critical systems will be compliant but they anticipate problems across the university.
- What will be the impact of any faults that may occur?
  Since we are expecting faults of minor systems we will address them as they arrive. Fortunately we have two weeks after the first of the year before classes resume.

Appendix B1 – Brightpoint Inc. "Happy Letter"

May 10, 1999

Year 2000 Readiness Disclosure
Pursuant to the Year 2000 Information Readiness Disclosure Act, Public Law #105-271.

[Addressee Name]
[Position]
[Company]
[Street Address]
[City, State, Country, Post Code]

Re: Response to Inquiry Regarding Year 2000 Issue

Dear [Name]:

This letter addresses your recent inquiry as to Year 2000 issues facing Brightpoint, Inc. ("Brightpoint"). Brightpoint incorporates leading-edge technology to assist us in providing the highest level of service possible to our clients, including [Company Name], in the most efficient and timely manner. As a result, many of the tasks we perform involve computer hardware and software tools. We firmly believe that our knowledge and utilization of leading edge technology provides us with the ability to provide service and expertise that is unparalleled in our industry.

Brightpoint is addressing the Year 2000 issue by undertaking an audit of our current internal systems and by sending inquiries to our vendors of mission-critical systems regarding their Year 2000 readiness status. In addition, Brightpoint has formed a Year 2000 Task Force to monitor progress on the Year 2000 problem. Finally, while Brightpoint is not the manufacturer of the equipment we distribute and, therefore, cannot make representations about the readiness of this equipment, it is informing the manufacturers of the Year 2000 concerns raised by our customers.

Brightpoint's goal is to complete its Year 2000 compliance plan by mid-1999. Given the complexity and interdependence of today's computer systems, it is of course impossible to say that Brightpoint is or will be completely immune from internally or externally generated Year 2000 difficulties. However, Brightpoint is sensitive to these issues and we believe this attention will allow us to continue providing services to our clients, now and through the transition to the Year 2000, without material interruption. We are confident that Brightpoint is well positioned to continue to provide our clients with the highest level of service and expertise in our industry. We look forward to assisting you in any way we can.

Sincerely,

[Name]
[Position]

Bibliography

MacMaster, Gordon (1999). Year 2000 Triage: The Interdependence between Software and Business [Online]. Available: http://www.year2000.com/y2kcurrent2.html [April 1999].

Page-Jones, Meilir (1988). The Practical Guide to Structured Systems Design (2nd Ed.) Englewood Cliffs, NJ: Yourdon Press.

Smith, Sandi, CPA, CMA, CDP (1997). Solving the Year 2000 Dilemma. New York, NY: American Institute of Certified Public Accountants, Inc.

Unknown (Unknown). The Year 200 FAQ [Online]. Available: http://www.cnet.com/Content/Reports/Special/Y2000/y2kfaq.htm [Feb 1999].

Yourdon, Edward, & Yourdon, Jennifer (1998). Time Bomb 2000. Upper Saddle River, NJ: Prentice Hall PTR.

Zetlin, Minda (1997). The Computer Time Bomb. New York, NY: American Management Association.